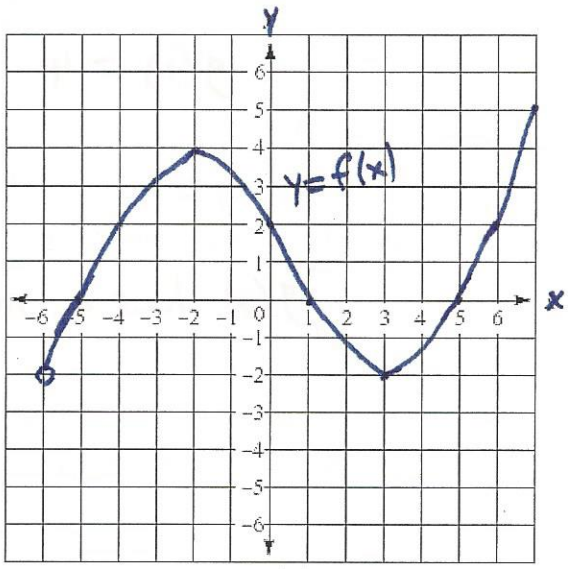
Mr. Michael T. Davis Algebra II – Delta & Eta	Unit 1 - Functions & Analyzing Graphs – Final Exam Review May 26, 2015

Name: Mr. Davis Solutions

1. Given the graph of $f(x)$ shown to the right:



a) Determine the value of $f(0) =$ 2

b) Determine the value of $f(x)$ when $x = -4$

$f(-4) = 2$

c) Solve $f(x) = 5$ at $x = 7$

$f(7) = 5$

d) Determine the values of x for which $f(x) = 0$

$x = -5, 1, 5$ $f(-5) = 0$ $f(1) = 0$ $f(5) = 0$

e) How many times does the line with equation $y = 4$ intersect the graph of $f(x)$?

Twice, at $x = -2$ and at $x = 6\frac{1}{2}$ approximately

f) On what intervals is $f(x) < 0$?

on $(-6, -5) \cup (1, 5)$

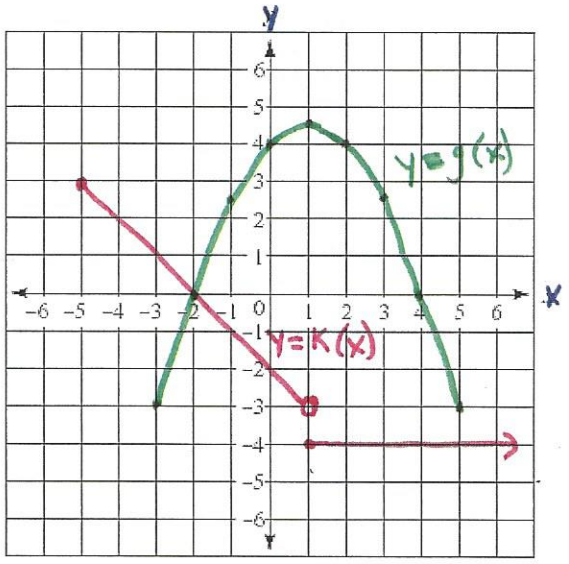
g) How many times does the line $y = -2$ intersect the graph of $f(x)$?

once, at $x = 3$

h) What is the relative minimum value of the graph of $f(x)$?

$y = -2$ or $f(3) = -2$

2. Given the graphs of $k(x)$ & $g(x)$ shown to the right:



a) Determine the domain of $g(x)$

$[-3, 5]$

b) Determine the range of $k(x)$

$-4 \cup (-3, 3]$

c) Determine the value of $g(k(-4))$

$k(-4) = 2$ $g(2) = 4$

d) On what interval is the graph of $g(x)$ increasing?

on $(-3, 1)$

e) On what interval is the graph of $k(x)$ decreasing?

on $(-5, 3)$

f) Determine the value of $g(0) + g(3)$

$g(0) = 4$ $g(3) = 2.5$ $g(0) + g(3) = 4 + 2.5 = 6.5$

g) What is the value of $|k(-1)|$?

$K(-1) = -1$ $|-1| = 1$

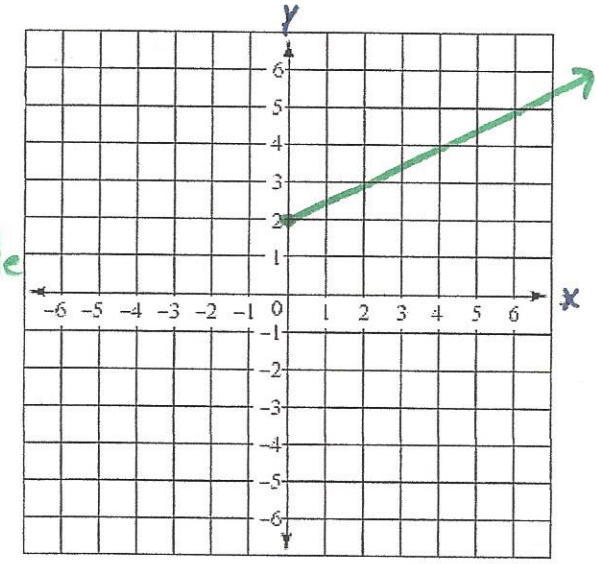
h) For what value of x does the graph of $g(x)$ have a relative maximum value?

$g(x)$ has a maximum value at $x = 1$

3. Sketch a graph of a function that has the given domain and range.

Domain: $[0, \infty)$ Range: $[2, \infty)$

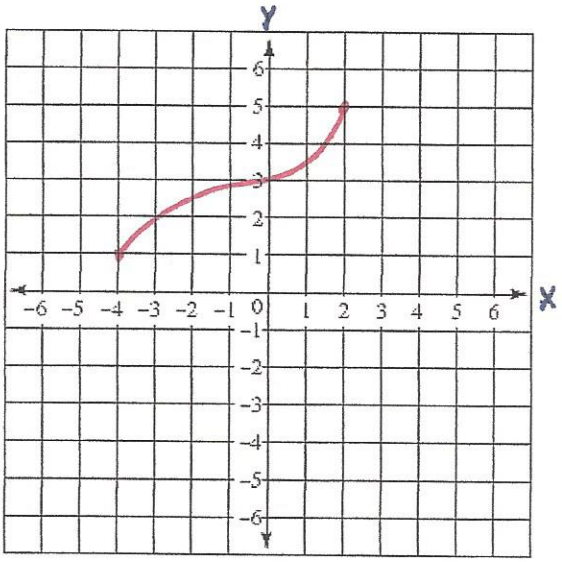
one example



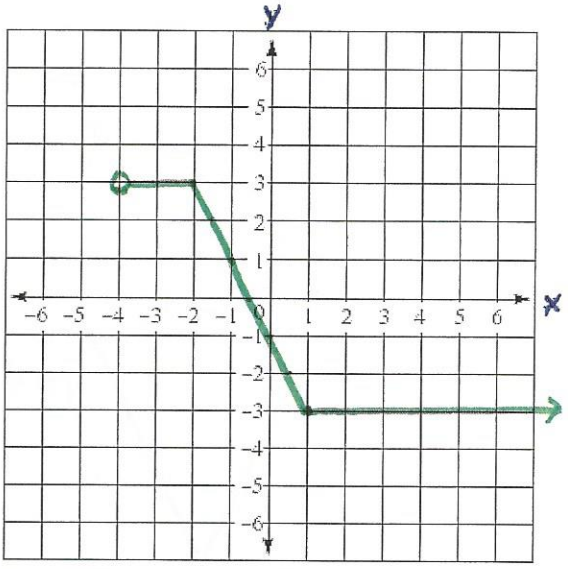
4. Sketch a graph of a function that has the given domain and range.

Domain: $[-4, 2]$ Range: $[1, 5]$

one example



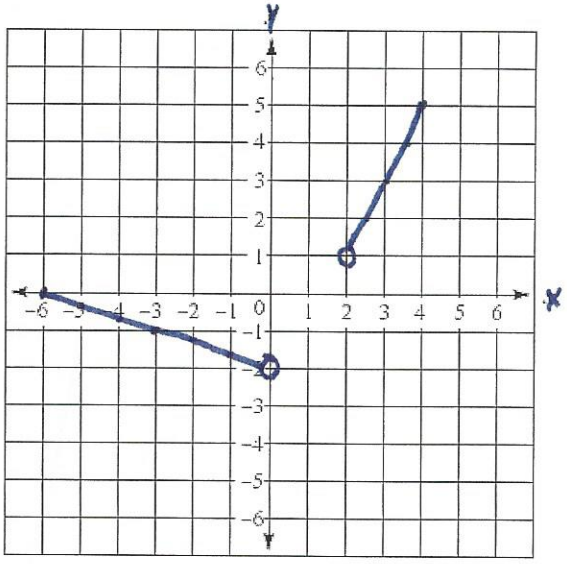
5. Given the graph of the function shown, clearly state the domain and range.



Domain: $(-4, \infty)$

Range: $[-3, 3]$

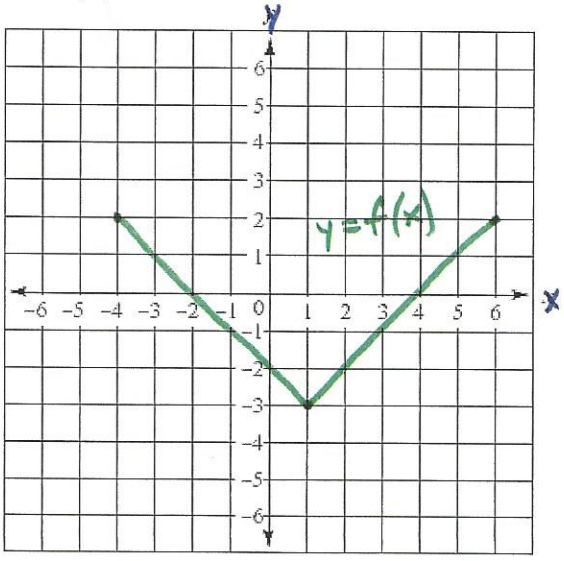
6. Given the graph of the function shown, clearly state the domain and range.

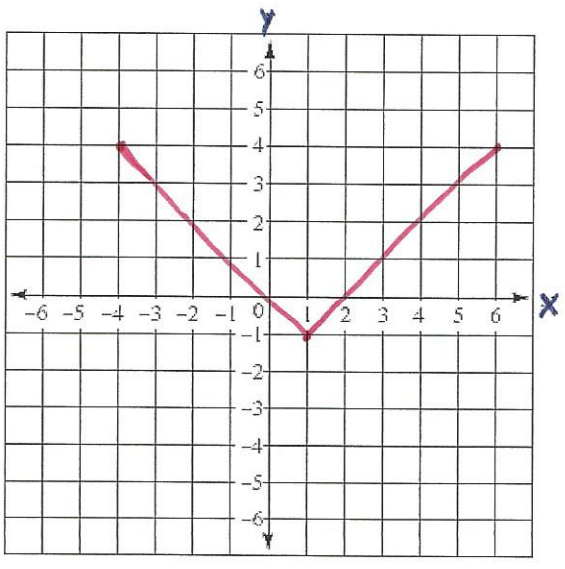


Domain: $[-6, 0) \cup (2, 4]$

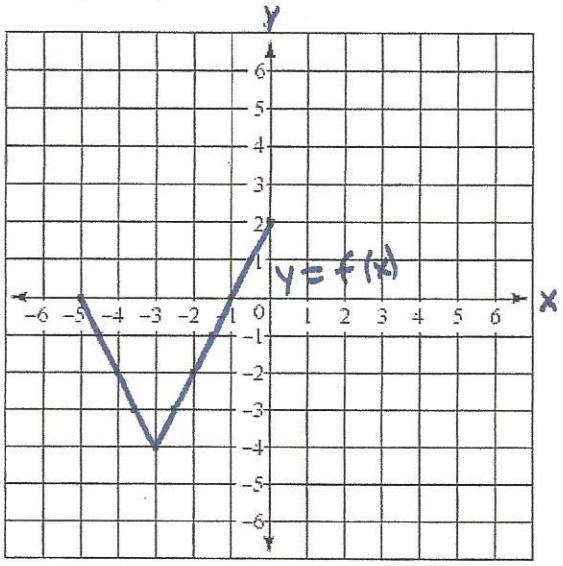
Range: $(-2, 0] \cup (1, 5]$

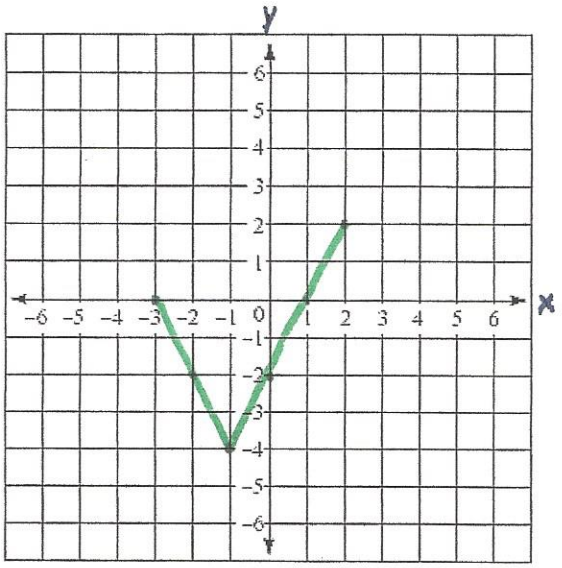
7. Given the graph of $f(x)$ shown below to the left, sketch a graph of the transformation $y = f(x) + 2$ on the grid to the right.





8. Given the graph of $f(x)$ shown below to the left, sketch a graph of the transformation $y = f(x-2)$ on the grid to the right.





9. Given the graph of $f(x)$ shown below to the right, sketch a graph of the transformation $y = -f(x)$ on the grid to the left.